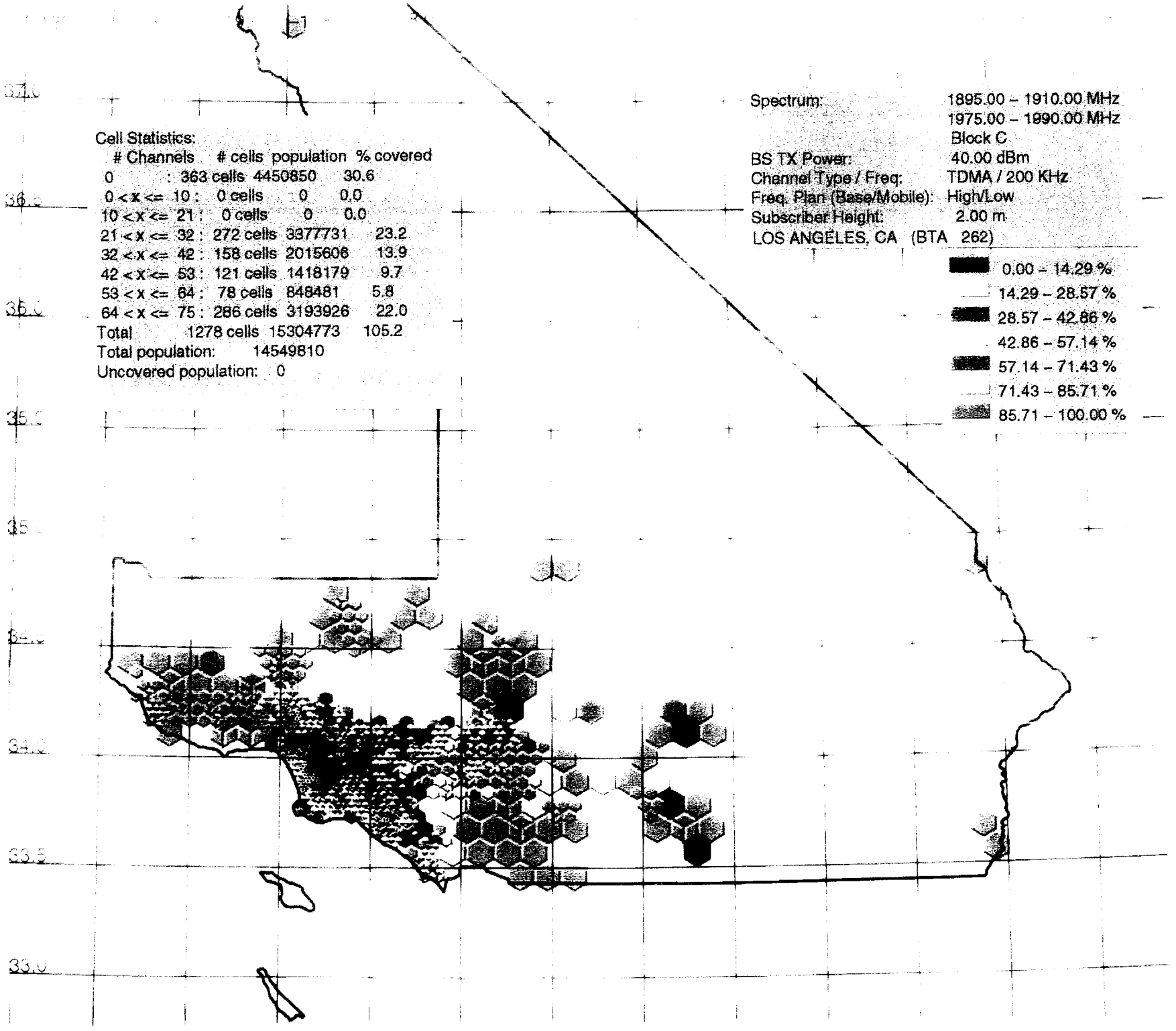
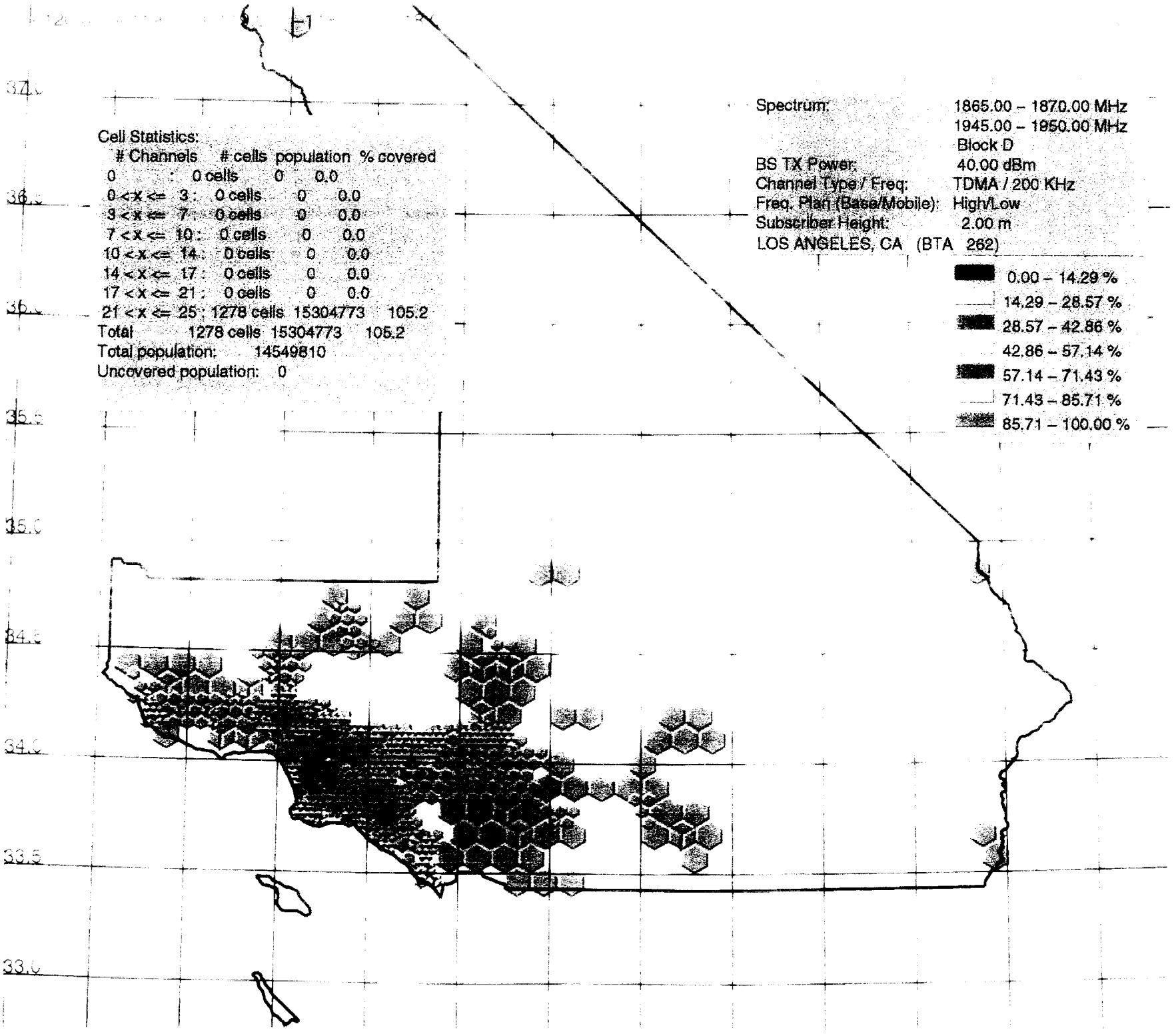
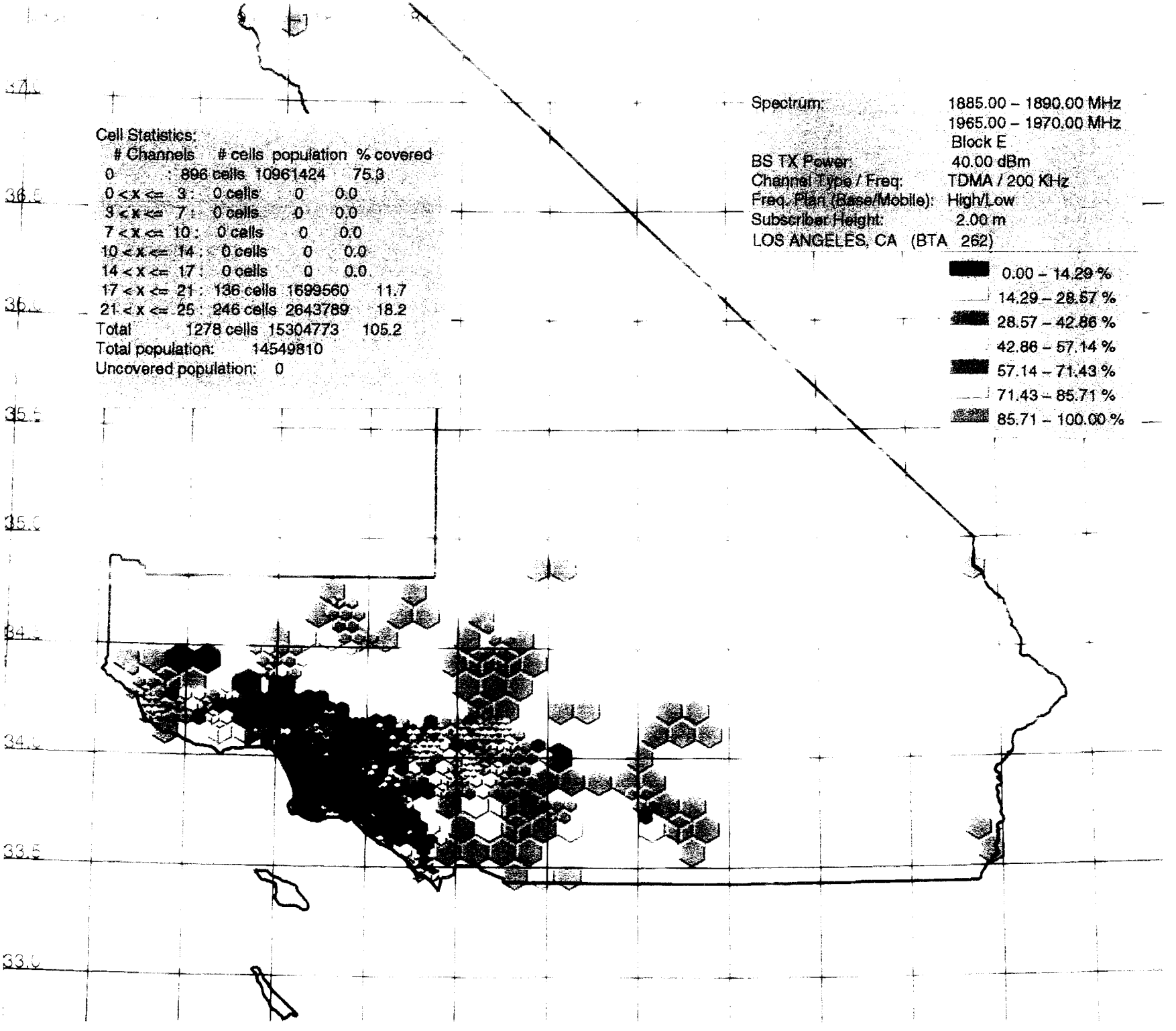
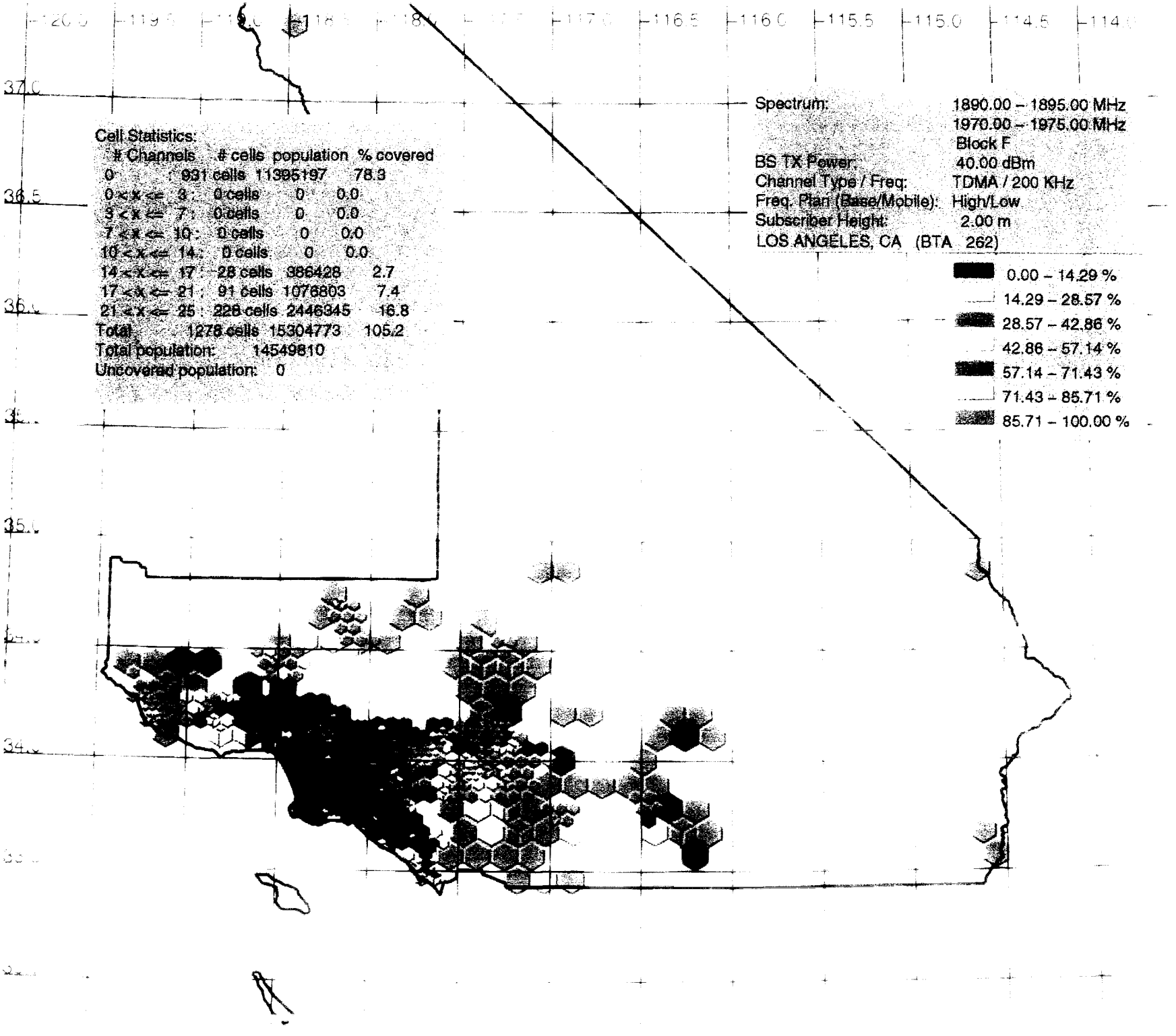

Cell Statistics:
Channels # cells population % covered
0 : 363 cells 4450850 30.6
0 < x <= 10 : 0 cells 0 0.0
10 < x <= 21 : 0 cells 0 0.0
21 < x <= 32 : 272 cells 3377731 23.2
32 < x <= 42 : 158 cells 2015606 13.9
42 < x <= 53 : 121 cells 1418179 9.7
53 < x <= 64 : 78 cells 848481 5.8
64 < x <= 75 : 286 cells 3193926 22.0
Total 1278 cells 15304773 105.2
Total population: 14549810
Uncovered population: 0
Spectrum: 1895.00 – 1910.00 MHz
1975.00 – 1990.00 MHz
Block C
BS TX Power: 40.00 dBm
Channel Type / Freq: TDMA / 200 KHz
Freq. Plan (Base/Mobile): High/Low
Subscriber Height: 2.00 m
LOS ANGELES, CA (BTA 262)
0.00 – 14.29 %
14.29 – 28.57 %
28.57 – 42.86 %
42.86 – 57.14 %
57.14 – 71.43 %
71.43 – 85.71 %
85.71 – 100.00 %


Cell Statistics:
Channels # cells population % covered
0 : 0 cells 0 0.0
0 < x <= 3 : 0 cells 0 0.0
3 < x <= 7 : 0 cells 0 0.0
7 < x <= 10 : 0 cells 0 0.0
10 < x <= 14 : 0 cells 0 0.0
14 < x <= 17 : 0 cells 0 0.0
17 < x <= 21 : 0 cells 0 0.0
21 < x <= 25 : 1278 cells 15304773 105.2
Total 1278 cells 15304773 105.2
Total population: 14549810
Uncovered population: 0
Spectrum: 1865.00 – 1870.00 MHz
1945.00 – 1950.00 MHz
Block D
BS TX Power: 40.00 dBm
Channel Type / Freq: TDMA / 200 KHz
Freq. Plan (Base/Mobile): High/Low
Subscriber Height: 2.00 m
LOS ANGELES, CA (BTA 262)
0.00 – 14.29 %
14.29 – 28.57 %
28.57 – 42.86 %
42.86 – 57.14 %
57.14 – 71.43 %
71.43 – 85.71 %
85.71 – 100.00 %
34.5
33.5


Cell Statistics:
Channels # cells population % covered
0 : 896 cells 10961424 75.3
0 < x <= 3 : 0 cells 0 0.0
3 < x <= 7 : 0 cells 0 0.0
7 < x <= 10 : 0 cells 0 0.0
10 < x <= 14 : 0 cells 0 0.0
14 < x <= 17 : 0 cells 0 0.0
17 < x <= 21 : 136 cells 1699560 11.7
21 < x <= 25 : 246 cells 2643789 18.2
Total 1278 cells 15304773 105.2
Total population: 14549810
Uncovered population: 0
Spectrum: 1885.00 – 1890.00 MHz
1965.00 – 1970.00 MHz
Block E
BS TX Power: 40.00 dBm
Channel Type / Freq: TDMA / 200 KHz
Freq. Plan (Base/Mobile): High/Low
Subscriber Height: 2.00 m
LOS ANGELES, CA (BTA 262)
0.00 – 14.29 %
14.29 – 28.57 %
28.57 – 42.86 %
42.86 – 57.14 %
57.14 – 71.43 %
71.43 – 85.71 %
85.71 – 100.00 %


Cell Statistics:
Channels # cells population % covered
0 : 931 cells 11395197 78.3
0 < x <= 3 : 0 cells 0 0.0
3 < x <= 7 : 0 cells 0 0.0
7 < x <= 10 : 0 cells 0 0.0
10 < x <= 14 : 0 cells 0 0.0
14 < x <= 17 : 28 cells 386428 2.7
17 < x <= 21 : 91 cells 1076803 7.4
21 < x <= 25 : 228 cells 2446345 16.8
Total : 1278 cells 15304773 105.2
Total population: 14549810
Uncovered population: 0
Spectrum: 1890.00 – 1895.00 MHz
1970.00 – 1975.00 MHz
Block F
BS TX Power: 40.00 dBm
Channel Type / Freq: TDMA / 200 KHz
Freq. Plan (Base/Mobile): High/Low
Subscriber Height: 2.00 m
LOS ANGELES, CA (BTA 262)
0.00 – 14.29 %
14.29 – 28.57 %
28.57 – 42.86 %
42.86 – 57.14 %
57.14 – 71.43 %
71.43 – 85.71 %
85.71 – 100.00 %
116.5
116.0
115.5
115.0
36.5

Cost Sharing Calculation

- Based on the interference analyses presented the contribution of all the PCS parties can be calculated.
- PCS Blocks A and D would have no contribution because they did not cause any harmful interference.
- PCS Blocks B, C, E, and F would contribute to cost of relocating these links because all 4 blocks benefit from the relocation.
- The cost to each PCS licensee would depend on when they would have caused interference. The cost is calculated by the following formula:

Cost Sharing Calculation

- $R_N = C/N \times (120-(T_N-T_1))/120$
  - » R_N= the relocation contribution of the N^{th} PCS provider (contribution is distributed equally to all previous contributors)
  - » C = the amount paid to relocate the link
  - » N = the number of the interfering PCS provider
  - » T_N = the number of the month in which PCS provider N would have caused interference with the link
  - » T_1 = the month the first PCS provider obtained the interference rights as listed in the FCC database.
- The next page provides a summary of the contribution for the 4 PCS licensees based on different entry times.

Cost Sharing Calculation Examples

Initial amount to move MW link:	$253,000.00								
		Month	Total Payment	PCS OP1	PCS OP2	PCS OP3	PCS OP4	PCS OP5	PCS OP6
Date of interference rights:	1/1/96	1	$253,000.00	$253,000.00					
Date that 2nd operator activated:	7/4/96	7	$120,175.00	($120,175.00)	$120,175.00				
Date that 3rd operator activated:	11/15/97	23	$68,872.22	($34,436.11)	($34,436.11)	$68,872.22			
Date that 4th operator activated:	2/22/98	26	$50,072.92	($16,690.97)	($16,690.97)	($16,690.97)	$50,072.92		
Date that 5th operator activated:			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Date that 6th operator activated:			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
			NET COST:	$81,697.92	$69,047.92	$52,181.25	$50,072.92	$0.00	$0.00
			% of Total Cost:	32%	27%	21%	20%	0%	0%

Initial amount to move MW link:	$253,000.00								
		Month	Total Payment	PCS OP1	PCS OP2	PCS OP3	PCS OP4	PCS OP5	PCS OP6
Date interference rights obtained:	1/1/96	1	$253,000.00	$253,000.00					
Date that 2nd operator activated:	2/1/96	2	$125,445.83	($125,445.83)	$125,445.83				
Date that 3rd operator activated:	11/1/96	11	$77,305.56	($38,652.78)	($38,652.78)	$77,305.56			
Date that 4th operator activated:	1/1/98	25	$50,600.00	($16,866.67)	($16,866.67)	($16,866.67)	$50,600.00		
Date that 5th operator activated:			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Date that 6th operator activated:			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
			NET COST:	$72,034.72	$69,926.39	$60,438.89	$50,600.00	$0.00	$0.00
			% of Total Cost:	28%	28%	24%	20%	0%	0%

Initial amount to move MW link:	$253,000.00								
		Month	Total Payment	PCS OP1	PCS OP2	PCS OP3	PCS OP4	PCS OP5	PCS OP6
Date interference rights obtained:	1/1/98	25	$253,000.00	$253,000.00					
Date that 2nd operator activated:	1/1/98	25	$126,500.00	($126,500.00)	$126,500.00				
Date that 3rd operator activated:	1/1/02	73	$50,600.00	($25,300.00)	($25,300.00)	$50,600.00			
Date that 4th operator activated:	1/1/04	97	$25,300.00	($8,433.33)	($8,433.33)	($8,433.33)	$25,300.00		
Date that 5th operator activated:			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Date that 6th operator activated:			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
			NET COST:	$92,766.67	$92,766.67	$42,166.67	$25,300.00	$0.00	$0.00
			% of Total Cost:	37%	37%	17%	10%	0%	0%

Conclusion

- We have presented a case study of how the Pacific Bell Mobile Services PCS Microwave Relocation Cost Sharing Proposal would function in distributing the relocation cost among all the parties that would benefit from a particular microwave relocation.
- The interference analyses demonstrated are required under the current PCS rules. The simulation model used in the analysis considers the filter characteristics of the microwave link under analysis and is commercially available.

Conclusion

- The PCN process required under the PCS rules will provide holders of interference rights sufficient information to perform these types of interference studies quickly or employ frequency protection services.
- The cost sharing model used fairly distributes the cost of the microwave relocation among all the PCS licensees who benefit from the relocation.
- No PCS licensee will be required to contribute to the relocation cost unless their system would have caused harmful interference. Later licensees will have the ability to perform cost tradeoffs of redesign vs relocate.

Conclusion

- The Pacific Bell Mobile Services PCS Microwave Relocation Cost Sharing Plan is simple, equitable, and self enforcing. It addresses the needs of the early PCS providers for cost recovery and protects later entrants with the cost cap and straight line depreciation. Cost sharing is only required in cases where a PCS licensee would have caused harmful interference and allows the option of redesign to avoid harmful interference.